



# SEQUENCE LISTING

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<120> BIOMARKERS AND TARGETS FOR DIAGNOSIS, PROGNOSIS AND  
MANAGEMENT OF PROSTATE, BREAST AND BLADDER CANCER

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<160> 88

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<210> 1

<211> 391

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 1

gtccagtcgc tcagaaattt cctttgatgc ttgaagtta tctctcttgg atctgcttcc 60  
tccttatcgt ctctacatcc caagaacaga gaggagtct tctttatttt cttatctctg 120  
tttttagcac agtatttgat atatagtga gatactataa atgcttgcta aactttgtca 180  
aattccacat ttttaaata aaaatgagaa tgagcttgta gtcaacatgg cgtttgtaag 240  
tttgaggtct atatatgga gatatacata ttttaaatac taagtgaac tttctcttg 300  
attatcttga aatgccttat catctccaca ttgctgtag gcagtagttt agtgggtcca 360  
ttatatctgc cacactgatt gtcttaaata a 391

<210> 2

<211> 614

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 2

cagtagtggc cccaaatgcc aggctgcact gatattttatt ggatataaga caaaggggca 60  
gggtaaggaa tgtgaaccat ctccaataat aggtaaggtc acatgggtca tgtgtccact 120  
ggacaggggg cccttccttg cctggcagca gaggcagaga gagagagaag agagagagac 180  
agcttatgcc attattttctg catatcagac atttagtact ttcactaatt tgctcctgct 240  
atctaaaagg cagagccagg tatacaggat ggaacatgaa agcggactag gagcgtgacc 300  
actgaagcac agcatcacag ggagacaggc ctctggatac tggccggggg gccctgactg 360  
atgtcaaggc cctccacaag agtggaggag ttagtcttcc tctaaactcc cccgggggaa 420  
agggaggctc cttttccag tctgctaagt agtgggtgtt tttccttgac actgatgcta 480  
ctgctagacc atgggtccact ttgcaacagg catcttccca gacactggtg ttactgctag 540  
accaagccct ctggtggccc tgtccgggca taagagaagg ctcacactct tgtcttctgg 600  
ccacttcgca ctat 614

<210> 3

<211> 757

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 3

acaacgacac attcaggagt taaatattta tcatcaaaca ttggattttt ccttaacgct 60  
agagattgct acaaatcttc tgaagggtct catggcttc aggctaagaa gagatttctc 120  
cctgttataa gcagcaagac aaattagcca tttcactctc aaacttcact aatgatcaca 180  
ttctttccaa aaggaactct agaagaccaa atgccccgag ttaagaacat caaaactaac 240  
catctgaaga aacttcccaa gtgtaagact ctgccattaa aacattaccg agaggggact 300  
caaacagtct tttcttcctt ttgtcgtgtt tctttgctcc cagaccaag gcacttggcg 360  
gacagtactt gatacaataa tttaaaaagc accactccct tcccactttg taaataccca 420  
gaactctaatt tggaccacce tgaagcttag gacctaccag ccatacaaatt agtaaactct 480  
gtccacgatt cactcatctg tgtattttct atagatgttt actaggcggt tgttatataa 540  
aaataccccg gccaggcacg gtggctcacg cctgtaatcc cagcactttg ggaggtgggt 600  
ggatcacctg aggtcgggag ttcgagacca gcctgaccag catggtggaa ccccatctc 660  
tactaaaaac aaaaaaatt agccgggcgt ggtggcacat gcctgtaatc ccagctactc 720

aggaggctga ggcggagaat tgcttgaacc cggaagg

757

<210> 4

<211> 673

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 4

caggacacag agtaagatac ccactgactt cttgtggtct acttcctggg tgttgtttca 60  
atgggctttg ttataacagg actagtcttc tgtaaataca acttggtaaa taggatgaaa 120  
cataactttg cgacaattca gtagaaatag gcatacaaac ctgggcctga tgacactcac 180  
ctccccttgg ctataaacat taccctacct gttaagtcag taatcctttg ggagagcgct 240  
tactgagtat ctatgatatg caaagaccaa agaccgaggg ggatccctgg ttagagcaa 300  
gcacacacct ggttattagc tacctgccac cctgctgggc atgcaacata cattgtctca 360  
aattctaacc accctgcaag gcaagcttcc ttgttctttt aaagaagaaa agtagaccag 420  
caagattgat ttgctcaaga ttacacagcc tggaatcttg tcatgggcat gtctgactct 480  
gatagcaata ccctcaaaga aactgtcaga gaagactcaa taagaagaaa gttgagatac 540  
agaaaccaac aggagaaggt aattcagaaa ttcaaacaga gtgggtgtga tgggaagaat 600  
tcattaataa gaaggtacct ctgtagaaaa atcttaccag acagtctgga agtgaaggaa 660  
acagccaata gtc 673

<210> 5

<211> 358

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 5

gtcactgcac attaagatgg agcccgaaga gccacactcc gagggggcat cgcaggagga 60  
tggggctcaa ggtgcctggg gctgggcacc cctaagtcac ggctctaagg agaaagctct 120  
cttctgccc ggcggagccc tcccctcccc ccggatcccc gtgctttccc gagaggggag 180  
gaccagagac cggcagatgg ctgcagcgct ctcactgcc tgggccaga tgccagtgc 240  
tttcgaggat gtggccttgt acctctcccg ggaggagtgg ggacggctgg accacacgca 300

gcagaacttc tacaggaat gtcctgcaga agaaaaatgg gctgtcactg ggctttcc 358

<210> 6

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 6

cacagatgta gcttcctcac tgg 23

<210> 7

<211> 610

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 7

ctggagtaca atgtcagtgt ttacactgtc aaggatgaca aggaaagtgt ccctatctct 60  
gataccatca tcccagctgt tctcctccc actgacctgc gattcaccaa cattgggtcca 120  
gacaccatgc gtgtcacctg ggctccacc ccattccattg atttaaccaa ctctctgggtg 180  
cgttactcac ctgtgaaaaa tgaggaagat gttgcagagt tgtcaatttc tcttcagac 240  
aatgcagtgg tcttaacaaa tctcctgcct ggtacagaat atgtagttag tgtctccagt 300  
gtctacgaac aacatgagag cacacctctt agaggaagac agaaaacagg tcttgattcc 360  
ccaactggca ttgacttttc tgatattact gccaaactctt ttactgtgca ctggattgct 420  
cctcgagcca ccattactgg ctacaggatc cgccatcatc ccgagcactt cagtgggaga 480  
cctcgagaag atcgggtgcc ccactctcgg aattccatca ccctcaccaa cctcactcca 540  
ggcacagagt atgtggtcag catcgttgct cttaatggca gagaggaaag tcccttattg 600  
attggccaac 610

<210> 8

<211> 1649

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

# Primer

<400> 8

cggcagccag cctattcttt ggccgggtcg gtgcgagtgg tcggctgggc agagtgcacg 60  
ctgcttggcg ccgcaggtga tcccgcgcgc cactcccggg agcagtgatg ttgggcaact 120  
ctgcgccggg gcctgcgacc cgcgaggcgg gctcggcgct gctagcattg cagcagacgg 180  
cgctccaaga ggaccaggag aatatcaacc cggaaaaggc agcgcccgc caacaaccgc 240  
ggacccgggc cgcgctggcg gtactgaagt ccgggaaccc gcgggggtcta gcgcagcagc 300  
agaggccgaa gacgagacgg gttgcacccc ttaaggatct tcctgtaaat gatgagcatg 360  
tcaccgttcc tccttggaaa gcaaacagta aacagcctgc gttcaccatt catgtggatg 420  
aagcagaaaa agaagctcag aagaagccag ctgaatctca aaaaatagag cgtgaagatg 480  
ccctggcttt taattcagcc attagtttac ctggaccag aaaaccattg gtccctcttg 540  
attatccaat ggatggtagt tttgagtcac cacatactat ggacatgtca attgtattag 600  
aagatgaaaa gccagtgagt gttaatgaag taccagacta ccatgaggat attcacacat 660  
accttaggga aatggaggtt aaatgtaaac ctaaagtggg ttacatgaag aaacagccag 720  
acatcactaa cagtatgaga gctatcctcg tggactgggt agttgaagta ggagaagaat 780  
ataaactaca gaatgagacc ctgcatttgg ctgtgaacta cattgatagg ttctgtctt 840  
ccatgtcagt gctgagagga aaacttcagc ttgtgggcac tgctgctatg ctgttagcct 900  
caaagtttga agaaatatac ccccagaag tagcagagtt tgtgtacatt acagatgata 960  
cctacaccaa gaaacaagtt ctgagaatgg agcatctagt tttgaaagtc cttacttttg 1020  
acttagctgc tccaacagta aatcagtttc ttaccaata ctttctgcat cagcagcctg 1080  
caaactgcaa agttgaaagt ttagcaatgt ttttgggaga attaagtttg atagatgctg 1140  
accatacct caagtatttg ccatcagtta ttgctggagc tgcccttcat ttagcactct 1200  
acacagtcac gggacaaagc tggcctgaat cattaatacg aaagactgga tataccctgg 1260  
aaagtcttaa gccttgtctc atggaccttc accagaccta cctcaaagca ccacagcatg 1320  
cacaacagtc aataagagaa aagtacaaaa attcaaagta tcatgggtgt tctctctca 1380  
accaccaga gacactaaat ctgtaacaat gaaagactgc ctttgttttc taagatgtaa 1440  
atcactcaaa gtatatggtg tacagttttt aacttaggtt ttttaatttta caatcatttc 1500  
tgaatacaga agttgtggcc aagtacaaat tatggatatct attacttttt aaatggtttt 1560  
aatttgata tcttttgtat atgtatctgt cttagatatt tggctaattt taagtggttt 1620

tgttaaagta ttaatgatgc cagctgccg

1649

<210> 9

<211> 175

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 9

accactcgt gagtccaacg gtcttttctg cagaaaggag gactttcctt tcaggggtct 60

ttctggggct cttactataa aaggggacca actctccctt tgtcatatct tgtttctgat 120

gacaaaaaat aacacattgt taaaattgta aaattaaaac atgaaatata aatta 175

<210> 10

<211> 166

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 10

gtttcgctcc acattcatcc tttcttactg ggcactgatg ttgagagcat caggcagggt 60

ataatgttat gttgcagtaa caaacaccct caatatctca gtggcttaaa atgacaacga 120

tctttttttt gtttgtttgt ttatgctcta tatcaccag ggatca 166

<210> 11

<211> 107

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 11

tgctctgccc cacatctgaa caagctaata agaaagcccg atgttctttc ctttggtgcc 60

attgggaaat tcaaaccatg cacaactctg cctgtatgaa gggcgca 107

<210> 12

<211> 183

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 12

caaccttagc ccctctctc ttcttcacga tgccattctg ccatttctgt tttgtggtag 60  
acaggttggc ccaggcactc taaggcccag gctggcacag gttggcccag gcacttcaag 120  
cctaagtcca ttacagttt ctattccatc tcttcctaaa gaagaggaga ggggctaagg 180  
ttg 183

<210> 13

<211> 92

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 13

aaacaaacgt ctttgggtaa aattctatct cttttaatgt tttaaaatat ttgtagtcac 60  
taattgtaag tcatattcct ctttgtccag ct 92

<210> 14

<211> 182

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 14

gatgtaatta aagctgtaga tgagggctat cgactgccac ccccatgga ctgcccagct 60  
gccttgatc agctgatgct ggactgctgg cagaaagaca ggaacaacag acccaagttt 120  
gagcagattg ttagtattct ggacaagctt atccggaatc ccggcagcct gaaggatcat 180  
ca 182

<210> 15

<211> 174

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 15  
gccaaatggg tagcattggt gctcggcctt ctagtctgcc agtaggaaag tccaaccatt 60  
aggtcgggga agaagggctt ggatttggtt gacaatgggtt ggatggggga tagaagcaga 120  
gagagagagg gagggcagct caagggtatc ttgccccact ctgtttatgc tgat 174

<210> 16  
<211> 132  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 16  
cacctaacaa tatatcaatt ttttaaaaat ggaatttctt atgccctctt tatttatgga 60  
catgtatgtc cataatggga gacgttttct ttggactgat gcttgaatca gtgggtgctt 120  
ggcattgctg at 132

<210> 17  
<211> 135  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 17  
cagacacaca catgcacacc attctagaat gcttccttaa aagaaggagg gttgccctag 60  
tctcaaaatc ttaaaagcca tatgtgcatt gatttctgca caggtaggca atttgtgatt 120  
ttatttttcc ttatg 135

<210> 18  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 18  
cttcatggca ggactcggtt tggg 24

<210> 19  
<211> 471



<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 19  
gccccaaatg ccaggctgca ctgatctcat gtctgtgtca ctggaaccaa caggcctgcc 60  
tcaaccactg tccacctgca catctgagag gctggcaggt caccagggct agccgtgcac 120  
gtcagttcct gggaagaaag tagaatgtga atcatcttct ctcaaacgcc tatcaaaagc 180  
ccagctgaga tcaataattt ggtgggagaa cagacctgta ccaattggct cgggtgtttgg 240  
tgggggtattg taaatttgga tcctaaatca aagggtatcc ctagaaggac ccacatggaa 300  
tggcctcctc ctaaacatcc ctccatgttg gtacttcttg actcttttcc agcaatctca 360  
aagcacaaga agcagtgggtg ggaacccagg cctggcatct tgttggagcc catgggttggg 420  
gggtaggagc aactttacag gccatcaatt atgccctat acgcacctcc c 471

<210> 20  
<211> 209  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 20  
gccctttata aatagatta gtatggagaa ttgatacatt aacagtttagc tttataaatt 60  
gacagatttc taaattaacc tatgggtccac aaatcaagtt ctatcactat ttctgtccac 120  
caaaatcagt gatgaagcct ctccacact aaatgaagag tggcgagggg cagaattcca 180  
cttgtcttcc ttttgctgca ctaactaca 209

<210> 21  
<211> 407  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 21  
caagcagcat agcctctctg aaactcaatt tcctcacatt tataaatgag cttttatatt 60  
atttaciaaac ctacctcata gagcagggtg caggctacat gagaagggtgc aagttcaatg 120

ccaagcaggg tcctagtatt taataaaagc tcaataaata ttcattttct tctttccttc 180  
tcttacttga agtataacat ttgataatga attttctcat tgcaacaata acacccttc 240  
cactgagggg tttgtatccc tgcttaagaa gctattagta ttctacagca ggactcacc 300  
cacacaatct tggcaggaat acatccctct acctctctgg tcaataacct gcctggcctg 360  
tgaccccgagg cttcctggag aagcaccaag tcctcccgagg ttccccc 407

<210> 22

<211> 267

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 22

cattggtgca gcaggttttag atggctatgt gctagagtat tgctttgaag gaagtaagta 60  
caaccagtag ataaaatgaa tactgtcatc aataggtgag atatgtccct cccctttctg 120  
ttgtctctct ttcttgagaa cgcacacct tcctacgaaa ataagatcaa gccaaacgtc 180  
atccttctga gatgtatata aactaagccc ttttttagta cttggtgctt ataaattgat 240  
atctcaaaag tatcttggtc aggctgc 267

<210> 23

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 23

catagtccag gacgagagt agccagaatt gcctcctgct gcccagctt agagagctcc 60  
catctcaatc attgagcctg aaggcttcaa gcccaaatg caacaagacc cccagcctac 120  
atttctcagc tccctggag ccagtgatcc tgtaacgctg ctggagggtca gtctgagcta 180  
ccaagactgt ccctagacaa aggtgggagt cccacacact gccaaagacca aatccctcac 240  
tcaacctgct gaggtgttgg atggggaaac aagaggcaaa actgaggcac ctgatgcatt 300  
cagccctgct tgtgcagaag tgcattgact gcc 333

<210> 24

<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 24  
cctgtggcgt aaggcatccc a 21

<210> 25  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 25  
gcaagcactc ctttgtaaaa tgtcc 25

<210> 26  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 26  
tgcgttcacc attcatgtgg atgaaqcag 29

<210> 27  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 27  
ctcctacttc aactaaccag tccacgag 28

<210> 28  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 28  
gatgctttga agttatctct cttgg 25

<210> 29  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 29  
atcagtgtgg cagatataat ggacc 25

<210> 30  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 30  
gccccaaatg ccaggctgca ctgat 25

<210> 31  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 31  
gccagaagac aagagtgtga gcctt 25

<210> 32  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 32  
gcttcagggt ggtccaatta gagtt 25

<210> 33  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 33  
tccaacaacg acacattcag gagtt

25

<210> 34  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 34  
ggacacagag taagataccc actga

25

<210> 35  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 35  
cctcggctctt tggctcttgc atatc

25

<210> 36  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 36  
acaaggaaag tgtccctatc tctga

25

<210> 37  
<211> 25  
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 37

ctcgaggtct cccactgaag tgctc

25

<210> 38

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 38

cactgcacat taagatggag cccga

25

<210> 39

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 39

cctgtagaag ttctgctgcg tgtgg

25

<210> 40

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 40

cgagctgcct gacggccagg tcatc

25

<210> 41

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 41  
gaagcatttg cggtggacga tggag 25

<210> 42  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 42  
tagaagacca aatgccccga gt 22

<210> 43  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 43  
tgtatttctg tgggatcggt gg 22

<210> 44  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 44  
ccccttttat agtaagagcc ccaga 25

<210> 45  
<211> 369  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 45  
ccataagaga aatgattggt aggtttgcat gaaattttaa aatttcctgt ggcgtaaggc 60  
atcccataac gaagccaaaa ggtgagtgat agactgggag aaataactgc cagacgttgc 120

cagacaaaga tttcatatTTt ctaatatgct agagtacctt taatttgata agaaaaagat 180  
aagcaatcct gtaataaaat ggacatttta caaaggagtg cttgcaaag gccagtgaat 240  
ttatgcaaag atgttcaggg aaataggaat gaaaacgaga ttccactttt tcatcatcca 300  
tttgattggc aagaaatTTt taaaagagta atacctagtg aatcactcat gtaggaaaat 360  
gggttggtg 369

<210> 46  
<211> 301  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> modified\_base  
<222> (212)  
<223> n = A, C, G or T  
<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 46  
gcccttgaag agtgaacca agaagcatct ctcaatcaat gaacctgaga cagcctgttc 60  
acttctgacc atcattcttg tcctttagat ctcaagttca aattcatttc ttctagacat 120  
tcattctcttc ccatgtttta tctggaacca tctacccttc caccagacca attatcctgg 180  
caaattaatg taatagacca gtattaatta tntgggttgta tgtcttaaca acattctagg 240  
tgctgtgcca aaaacaaatg aatagcaaca caaggtcttc ttggttacac tcttcaaggg 300  
c 301

<210> 47  
<211> 3061  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> CDS  
<222> (15) .. (1172)  
<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 47  
cggctctcct caac atg aga gct gca ccc ctc ctc ctg gcc agg gca gca 50  
Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala  
1 5 10



agc ctt agc ctt ggc ttc ttg ttt ctg ctt ttt ttc tgg cta gac cga	98
Ser Leu Ser Leu Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg	
15 20 25	
agt gta cta gcc aag gag ttg aag ttt gtg act ttg gtg ttt cgg cat	146
Ser Val Leu Ala Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His	
30 35 40	
gga gac cga agt ccc att gac acc ttt ccc act gac ccc ata aag gaa	194
Gly Asp Arg Ser Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu	
45 50 55 60	
tcc tca tgg cca caa gga ttt ggc caa ctc acc cag ctg ggc atg gag	242
Ser Ser Trp Pro Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu	
65 70 75	
cag cat tat gaa ctt gga gag tat ata aga aag aga tat aga aaa ttc	290
Gln His Tyr Glu Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe	
80 85 90	
ttg aat gag tcc tat aaa cat gaa cag gtt tat att cga agc aca gac	338
Leu Asn Glu Ser Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp	
95 100 105	
gtt gac cgg act ttg atg agt gct atg aca aac ctg gca gcc ctg ttt	386
Val Asp Arg Thr Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe	
110 115 120	
ccc cca gaa ggt gtc agc atc tgg aat cct atc cta ctc tgg cag ccc	434
Pro Pro Glu Gly Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro	
125 130 135 140	
atc ccg gtg cac aca gtt cct ctt tct gaa gat cag ttg cta tac ctg	482
Ile Pro Val His Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu	
145 150 155	
cct ttc agg aac tgc cct cgt ttt caa gaa ctt gag agt gag act ttg	530
Pro Phe Arg Asn Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu	
160 165 170	
aaa tca gag gaa ttc cag aag agg ctg cac cct tat aag gat ttt ata	578
Lys Ser Glu Glu Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile	
175 180 185	
gct acc ttg gga aaa ctt tca gga tta cat ggc cag gac ctt ttt gga	626
Ala Thr Leu Gly Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly	
190 195 200	
att tgg agt aaa gtc tac gac cct tta tat tgt gag agt gtt cac aat	674
Ile Trp Ser Lys Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn	
205 210 215 220	
ttc act tta ccc tcc tgg gcc act gag gac acc atg act aag ttg aga	722
Phe Thr Leu Pro Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg	
225 230 235	

gaa ttg tca gaa ttg tcc ctc ctg tcc ctc tat gga att cac aag cag	770
Glu Leu Ser Glu Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln	
240 245 250	
aaa gag aaa tct agg ctc caa ggg ggt gtc ctg gtc aat gaa atc ctc	818
Lys Glu Lys Ser Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu	
255 260 265	
aat cac atg aag aga gca act cag ata cca agc tac aaa aaa ctt atc	866
Asn His Met Lys Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile	
270 275 280	
atg tat tct gcg cat gac act act gtg agt ggc cta cag atg gcg cta	914
Met Tyr Ser Ala His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu	
285 290 295 300	
gat gtt tac aac gga ctc ctt cct ccc tat gct tct tgc cac ttg acg	962
Asp Val Tyr Asn Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr	
305 310 315	
gaa ttg tac ttt gag aag ggg gag tac ttt gtg gag atg tac tat cgg	1010
Glu Leu Tyr Phe Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg	
320 325 330	
aat gag acg cag cac gag ccg tat ccc ctc atg cta cct ggc tgc agc	1058
Asn Glu Thr Gln His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser	
335 340 345	
cct agc tgt cct ctg gag agg ttt gct gag ctg gtt ggc cct gtg atc	1106
Pro Ser Cys Pro Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile	
350 355 360	
cct caa gac tgg tcc acg gag tgt atg acc aca aac agc cat caa ggt	1154
Pro Gln Asp Trp Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly	
365 370 375 380	
act gag gac agt aca gat tagtgtgrac agagatctct gtagaaagag	1202
Thr Glu Asp Ser Thr Asp	
385	
tagctgcctt ttctcagggc agatgatgct ttgagaacat actttggcca ttacccccca	1262
gctttgagga aaatgggctt tggatgatta ttttatgttt tagggacccc caacctcagg	1322
caattcctac ctcttcacct gacctgccc ccacttgcca taaaacttag ctaagttttg	1382
ttttgttttt cagcgtaaat gttaaaggggc agcagtgcca aaatataatc agagataaag	1442
cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca ggatcttttg	1502
tatttaagga ttctgagatt ttgcttgagc aggattagat aagtctgttc tttaaatttc	1562
tgaaatggaa cagatttcaa aaaaaattcc cacaatctag ggtgggaaca aggaaggaaa	1622
gatgtgaata ggctgatggg gaaaaaacca atttaccat cagttccagc cttctctcaa	1682
ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc actggaaaac	1742

tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac taaaaattaa 1802  
 aacctctttg tgtcccttgg tcctggaaca tttatgttcc ttttaaagaa aaaaaaatca 1862  
 aactttacag aaagatttga tgtatgtaat acatatagca gctcttgaag tatatatatc 1922  
 atagcaaata agtcatctga tgagaacaag ctatttgggc acaacacatc aggaaagaga 1982  
 gcaccacgtg atggagtttc tcagaagct ccagtataa gagatgttga ctctaaagtt 2042  
 gatttaaggc caggcatggt ggtttacgcc tataatccca gcattttggg actccgaggt 2102  
 gggcagatca cttgagctca ggagctcaag atcagcctgg gcaacatggt gaaaccttgt 2162  
 ctctacataa aatacaaaaa cttagatggg catggtgctg tgtgcctata gtccactact 2222  
 tgtggggcta aggcaggagg atcacttgag ccccgaggt cgaggctaca gtgacccaag 2282  
 agtgcactac tgtactccag ccagggcaag agagcgagac cctgtctcaa taaataaata 2342  
 aataaataaa taaataaata aataaaaaa aagttgatta agaaaggaag tataggccag 2402  
 gcacagtggc tcacacctgt aatccttgca ttttgaagg ctgaggcagg aggatcactt 2462  
 taggcctggt gtgttcaaga ccagcctggt caacatagtg agacactgtc tctacaaaaa 2522  
 aaaggaagga agggacacat atcaaaactga aacaaaatta gaaatgtaat tatgttatgt 2582  
 tctaagtgcc tccaagttca aaacttattg gaatgttgag agtgtggtta cgaaatacgt 2642  
 taggaggaca aaaggaatgt gtaagtcttt aatgccgata tcttcagaaa acctaagcaa 2702  
 acttacaggt cctgctgaaa ctgcccactc tgcaagaaga aatcatgata tagctttcca 2762  
 tgtggcagat ctacatgtct agagaacact gtgctctatt accattatgg ataaagatga 2822  
 gatggtttct agagatgggt tctactggct gccagaatct agagcaaagc catccccct 2882  
 cctggttggt cacagaatga ctgacaaaga catcgattga tatgcttctt tgtgttattt 2942  
 cctcccaag taaatgtttg tccttgggtc cattttctat gcttgtaact gtcttctagc 3002  
 agtgagccaa atgtaaaata gtgaataaag tcattattag gaagttcaaa aaaaaaaaaa 3061

<210> 48

<211> 386

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 48

Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu

1	5	10	15
Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala	20	25	30
Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser	35	40	45
Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro	50	55	60
Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu	65	70	75
Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser	85	90	95
Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr	100	105	110
Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly	115	120	125
Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His	130	135	140
Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn	145	150	155
Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu	165	170	175
Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly	180	185	190
Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys	195	200	205
Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro	210	215	220
Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu	225	230	235
Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser	245	250	255
Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys	260	265	270
Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala	275	280	285
His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn	290	295	300
Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe			

305                      310                      315                      320  
 Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln  
                                  325                      330                      335  
 His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro  
                                  340                      345                      350  
 Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp  
                                  355                      360                      365  
 Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser  
                                  370                      375                      380  
 Thr Asp  
 385

<210> 49  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 49  
 tcgctccaca ttcattccttt ct 22

<210> 50  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 50  
 tgatccctgg gtgatataga gcata 25

<210> 51  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Primer

<400> 51  
 gcccacatc tgaacaagct aataa 25

<210> 52  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 52  
tgcgcccttc atacaggcag agttg

25

<210> 53  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 53  
cacgatgcca ttctgccatt tctgt

25

<210> 54  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 54  
ggaagagatg gaatagaaac tgtaa

25

<210> 55  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 55  
cttaactcgg gcatttggtc ttc

23

<210> 56  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 56

Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile  
1 5 10 15

Asp Tyr Ser Ile Glu  
20

<210> 57

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Primer

<400> 57

cactggaacc aacaggcctg cctcaac

27

<210> 58

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Primer

<400> 58

ccgagccaat tggtagaggt ctgttctccc

30

<210> 59

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Primer

<400> 59

cctcaagact ggtccacgga gtgtatga

28

<210> 60

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 60  
gggtaatggc caaagtatgt tctcaaagca

30

<210> 61  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 61  
aaacaaacgt ctttgggtaa a

21

<210> 62  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 62  
ctggacaaag aggaatatga

20

<210> 63  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 63  
gccctttata aatacgatta gtatggag

28

<210> 64  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 64  
tgtagttagt gcagcaaaag gaaga

25



<210> 65  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 65  
gatgtaatta aagctgtaga tgaggg

26

<210> 66  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 66  
gaataactaac aatctgctca aacttggg

28

<210> 67  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 67  
gccaaatggg tagcattggt gctcgg

26

<210> 68  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 68  
cagagtgggg caagataccc ttgag

25

<210> 69  
<211> 21  
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 69

aatggaattt cttatgccct c

21

<210> 70

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 70

caatgccaag cacccactga ttc

23

<210> 71

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 71

acacagacac acacatgcac acca

24

<210> 72

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 72

cctacctgtg cagaaatcaa

20

<210> 73

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 73  
agcagcatag cctctctgaa actc 24

<210> 74  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 74  
ccttctcatg tagcctgcaa cctgctc 27

<210> 75  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 75  
cattggtgca gcaggtttag atgg 24

<210> 76  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 76  
gagatatcaa ttataagca ccaag 25

<210> 77  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 77  
atctcaatca ttgagcctga agg 23

<210> 78  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 78  
cagcaggttg agtgagggat ttgg

24

<210> 79  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 79  
cgcctcaggc tggggcagca tt

22

<210> 80  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 80  
acagtggaag agtctcattc gagat

25

<210> 81  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 81  
cgagctgcct gacggccagg tcata

25

<210> 82  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 82

gaagcatttg cggtggacga tggag

25

<210> 83

<211> 2088

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (99)..(503)

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 83

gaccttaa at atcgaggt ggctaattga tgtataataa tttacaaaat tattcttcta 60

ttgctacaga gctacaattc aatttacagt aggccacc atg agg gcc ttc tta agg 116

Met Arg Ala Phe Leu Arg

1

5

aac cag aaa tat gag gat atg cac aat att att cac att tta cag atc 164

Asn Gln Lys Tyr Glu Asp Met His Asn Ile Ile His Ile Leu Gln Ile

10

15

20

aga aaa ttg agg cac aga tta agt aac ttc cca agg cta cca ggc att 212

Arg Lys Leu Arg His Arg Leu Ser Asn Phe Pro Arg Leu Pro Gly Ile

25

30

35

cta gct cca gaa act gtg ctc tta cca ttc tgc tac aag gta ttt cga 260

Leu Ala Pro Glu Thr Val Leu Leu Pro Phe Cys Tyr Lys Val Phe Arg

40

45

50

aaa aaa gaa aaa gta aaa aga agt caa aag gca aca gag ttc att gat 308

Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile Asp

55

60

65

70

tat tcc ata gaa cag tca cac cat gca att ctc aca ccc ttg cag aca 356

Tyr Ser Ile Glu Gln Ser His His Ala Ile Leu Thr Pro Leu Gln Thr

75

80

85

cac ttg acc atg aaa ggt tcc tca atg aaa tgt tcc tca tta tct tca 404

His Leu Thr Met Lys Gly Ser Ser Met Lys Cys Ser Ser Leu Ser Ser

90

95

100

gaa gcc ata tta ttc aca ttg act ttg cag tta act cag acc cta ggt 452

Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln Leu Thr Gln Thr Leu Gly

105

110

115

ctg gaa tgc tgt ctt ctc tac tta tcc aaa act ata cat cca cag atc 500

Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys Thr Ile His Pro Gln Ile  
120 125 130

ata taaactctca gccctgctgc aaagcctttc cagaaaaata aaaatgggtg 553  
Ile  
135  
aaaaggcaat tctgctacca atgactgttt aagcccagcc aagtaactga accattccaa 613  
cttcaattta cttatgaaaa gaatttgatg atgtaggagg ttatttcaat tctaaaatac 673  
aaacccatgt tgatctttct caatcttgaa ctcatagatt attatctatt atctcaattt 733  
agtttgttat ttatcctagt gggccattaa aaactaccac atgtgtttct gtctctccat 793  
tagtcaataa ctaaactaac gagcaattag taagccatgt gccagatgct ccgctaggca 853  
ccagagggat aaaaacaata cttatagtat accactaatt ttcgcttagt aactagtga 913  
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aggaaagtga aactttggat aagtggggac tagtgtattt atatatttaa ttgatttctg 1033  
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tgggatcttc tgtgccagc acagtgcctg acacatagaa aacaatcaat atttgctgaa 1153  
taaatgatta aaaaatcaga gaactttccc attctgtttg gatctataga acatccagag 1213  
taagtgatga gggcctctgc atttatatgc gcttaaatta agattatgtg agaaaagttt 1273  
aaagacactt agtagagtga ttttgaaata tagtaaacac ttggaaatgg tggtgcttta 1333  
aaaagatatt aatagataat atgaaaatct ccatctcaaa aataatgcat aaactattta 1393  
aaggaaaatc acatctccag gctttcaatg tttgttcatt actttttcat atatttttcc 1453  
catctgctga aggcagtcac atcaaagggc aaagaaagat gggaggaaaa ctcagtaaga 1513  
attatattag tctgtttgca aagtagaaaa agattctcat cactcaacct tatgagcagg 1573  
aagaggggaag gctgtttgag aaccatttac ttagcagaac cacatatttt agacacttcc 1633  
ctgcattaac tgcacaaaca atatgtttgc aaacttgtr gatcaacctc caacaacgac 1693  
acattcagga gttaaattatt tttcatcaaa cattggattt ttccttaacg ctagagattg 1753  
ctacaaatct tctgaagggt ctcaatggct tcaggctaag aagagatttc tccctgttat 1813  
aagcagcaag acaaattagc catttctctc tcaaacttca ctaatgatca cattctttcc 1873  
aaaaggaact ctagaagacc aaatgccccg agttaagaac atcaaaaacta accatctgaa 1933  
gaaacttccc aagtgtgaaga ctctgctgc acgacaacac ataaaaaag agagaagaat 1993  
caaatagaca caataaaaaa tgataaaggg gatatcacca ccgatcccac agaaatacaa 2053

actaccatca gagaatacta caaacacctc tacgc

2088

<210> 84

<211> 135

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Peptide

<400> 84

Met Arg Ala Phe Leu Arg Asn Gln Lys Tyr Glu Asp Met His Asn Ile

1 5 10 15

Ile His Ile Leu Gln Ile Arg Lys Leu Arg His Arg Leu Ser Asn Phe

20 25 30

Pro Arg Leu Pro Gly Ile Leu Ala Pro Glu Thr Val Leu Leu Pro Phe

35 40 45

Cys Tyr Lys Val Phe Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys

50 55 60

Ala Thr Glu Phe Ile Asp Tyr Ser Ile Glu Gln Ser His His Ala Ile

65 70 75 80

Leu Thr Pro Leu Gln Thr His Leu Thr Met Lys Gly Ser Ser Met Lys

85 90 95

Cys Ser Ser Leu Ser Ser Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln

100 105 110

Leu Thr Gln Thr Leu Gly Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys

115 120 125

Thr Ile His Pro Gln Ile Ile

130 135

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<211> 2506

<212> DNA

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<223> Description of Artificial Sequence: Synthetic Primer

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Met Arg Ala Phe Leu Arg

1

5

aac cag aaa tat gag gat atg cac aat att att cac att tta cag atc 164  
Asn Gln Lys Tyr Glu Asp Met His Asn Ile Ile His Ile Leu Gln Ile  
10 15 20

aga aaa ttg agg cac aga tta agt aac ttc cca agg cta cca ggc att 212  
Arg Lys Leu Arg His Arg Leu Ser Asn Phe Pro Arg Leu Pro Gly Ile  
25 30 35

cta gct cca gaa act gtg ctc tta cca ttc tgc tac aag gta ttt cga 260  
Leu Ala Pro Glu Thr Val Leu Leu Pro Phe Cys Tyr Lys Val Phe Arg  
40 45 50

aaa aaa gaa aaa gta aaa aga agt caa aag gca aca gag ttc att gat 308  
Lys Lys Glu Lys Val Lys Arg Ser Gln Lys Ala Thr Glu Phe Ile Asp  
55 60 65 70

tat tcc ata gaa cag tca cac cat gca att ctc aca ccc ttg cag aca 356  
Tyr Ser Ile Glu Gln Ser His His Ala Ile Leu Thr Pro Leu Gln Thr  
75 80 85

cac ttg acc atg aaa ggt tcc tca atg aaa tgt tcc tca tta tct tca 404  
His Leu Thr Met Lys Gly Ser Ser Met Lys Cys Ser Ser Leu Ser Ser  
90 95 100

gaa gcc ata tta ttc aca ttg act ttg cag tta act cag acc cta ggt 452  
Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln Leu Thr Gln Thr Leu Gly  
105 110 115

ctg gaa tgc tgt ctt ctc tac tta tcc aaa act ata cat cca cag atc 500  
Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys Thr Ile His Pro Gln Ile  
120 125 130

ata taaactctca gccctgtgc aagcctttc cagaaaaata aaaatggttg 553  
Ile  
135

aaaaggcaat tctgctacca atgactgttt aagcccagcc aagtaactga accattccaa 613

cttcaattta cttatgaaaa gaatttgatg atgtaggagg ttatttcaat tctaaaatac 673

aaacccatgt tgatctttct caatcttgaa ctcatagatt attatctatt atctcaattt 733

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atgttcaagt catgcctgag tcaagagttg aggagacatt acaatgtgta atggaaacca 973

aggaaagtga aactttggat aagtggggac tagtgtatatt atatatttaa ttgatttctg 1033

actctatcat tggcctccaa acacagattg tgtttttctt tggttttggtt ttcttcacta 1093



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 taagtgatga gggcctctgc atttatatgc gcttaaatta agattatgtg agaaaagttt 1273  
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 ctttcttctt ttgtcgtgtt tcttgcctcc agaccaaggg actgacgaca gtactgatac 2053  
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 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 86

Met Arg Ala Phe Leu Arg Asn Gln Lys Tyr Glu Asp Met His Asn Ile  
1 5 10 15

Ile His Ile Leu Gln Ile Arg Lys Leu Arg His Arg Leu Ser Asn Phe  
20 25 30

Pro Arg Leu Pro Gly Ile Leu Ala Pro Glu Thr Val Leu Leu Pro Phe  
35 40 45

Cys Tyr Lys Val Phe Arg Lys Lys Glu Lys Val Lys Arg Ser Gln Lys  
50 55 60

Ala Thr Glu Phe Ile Asp Tyr Ser Ile Glu Gln Ser His His Ala Ile  
65 70 75 80

Leu Thr Pro Leu Gln Thr His Leu Thr Met Lys Gly Ser Ser Met Lys  
85 90 95

Cys Ser Ser Leu Ser Ser Glu Ala Ile Leu Phe Thr Leu Thr Leu Gln  
100 105 110

Leu Thr Gln Thr Leu Gly Leu Glu Cys Cys Leu Leu Tyr Leu Ser Lys  
115 120 125

Thr Ile His Pro Gln Ile Ile  
130 135

<210> 87

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Primer

<400> 87

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22

<210> 88

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 88

Gly Leu Glu Cys Cys Leu  
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